REMARKS

Claims 1 - 7, 9, 11, 24 - 29, and 34 - 49 are presented for consideration. Claims 1 - 7, 9, 11 - 20 and 22 - 49 are pending in the present application, but claims 12 - 20, 22, 23 and 30 - 33 are withdrawn. Claims 8, 10 and 21 were previously canceled. Reconsideration of the application is respectfully requested.

On 24 APR 2002, Applicants submitted and information disclosure statement (IDS), accompanied by a PTO-1449 (hereinafter "the PTO-1449"). PAIR shows the IDS as having a mail room date of 05-02-2002. Applicants have not received a copy of the PTO-1449 showing that the Office considered the references listed thereon. Accordingly, Applicants respectfully request that with the next communication, the Office please provide a copy of the PTO-1449, marked to show that the Office has considered the references.

In section 4 of the Office Action, claims 1, 2, 4, 9, 11, 24 - 29, 34, 36, 39 and 41 - 49 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,519,018 to Samant et al. (hereinafter "the Samant et al. patent"). Applicants are traversing this rejection.

Claim 1 provides for a liquid crystal device. The device includes, *inter alia*, a surface alignment structure providing a desired uniform alignment to a liquid crystal director. The surface alignment structure comprises a two dimensional array of alignment posts ... which are shaped and oriented to produce the desired alignment.

The Samant et al. patent, with reference to FIG. 2, discloses an alignment layer 30 that has walls 34 (col. 4, lines 43 - 44). The Office Action, on page 3, suggests that walls 34 are shaped and oriented to produce a desired alignment. Applicants respectfully disagree.

The Samant et al. patent states, at col. 5, lines 21 - 24:

> The walls or pillars of the alignment structures may be fabricated from a variety of different materials, so long as bond anisotropy can be induced in the material by ion bombardment (emphasis added).

The Samant et al. patent further states at col. 5, lines 43 - 50:

> The walls are further characterized in that at least a portion of the surface of the walls has bond anisotropy that is sufficient to align liquid crystal molecules vertical to the floor of the cell in which the wall is found, i.e. vertically to the substrate layer. By bond anisotropy is meant that the bonds on the surface of the wall are aligned in one direction such that liquid crystal molecules adjacent to the surface align in the direction of the bonds. (emphasis added)

Thus, in the Samant et al. patent, bond anisotropy produces a desired alignment. The Samant et al. patent does not describe walls 34 as being shaped or oriented to produce the desired alignment. Consequently, the Samant et al. patent does not disclose a two dimensional array of alignment posts ... which are **shaped and oriented to produce the desired alignment**, as recited in claim 1. Accordingly, the Samant et al. patent does not anticipate claim 1.

Claims 2, 4 and 9 depend from claim 1. By virtue of this dependence, claims 2, 4 and 9 are also novel over the Samant et al. patent.

Claim 11 is an independent claim, and includes a recital similar to that of claim 1, as described above. Therefore, claim 11, for reasoning similar to that provided in support of claim 1, is also novel over the Samant et al. patent.

Claims 24 - 29 depend from claim 1. By virtue of this dependence, claims 24 - 29 are also novel over the Samant et al. patent.

Claim 34 is an independent claim, and includes a recital similar to that of claim 1, as described above. Therefore, claim 34, for reasoning similar to that provided in support of claim 1, is also novel over the Samant et al. patent.

Claims 36, 39 and 41 - 47 depend from claim 34. By virtue of this dependence, claims 36, 39 and 41 - 47 are also novel over the Samant et al. patent.

Claim 48 is an independent claim, and includes a recital similar to that of claim 1, as described above. Therefore, claim 48, for reasoning similar to that provided in support of claim 1, is also novel over the Samant et al. patent.

Claim 49 depends from claim 1. By virtue of this dependence, claim 49 is also novel over the Samant et al. patent.

Applicants respectfully request reconsideration and withdrawal of the section 102(e) rejection of claims 1, 2, 4, 9, 11, 24 - 29, 34, 36, 39 and 41 - 49.

In section 6 of the Office Action, claims 3, 5, 6, 35, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Samant et al. patent in view of U.S. Patent No. 4,232,947 to Funada et al. (hereinafter "the Funada et al. patent"). Applicants are traversing this rejection.

Claims 3, 5 and 6 depend from claim 1, and further define ranges of height, width and spacing of the alignment posts. Similarly, claims 35, 37 and 38 depend from claim 34, and further define ranges of height, width and spacing of the alignment posts. Above, Applicants explained that each of claims 1 and 34 is novel over the Samant et al. patent. Applicants submit that the Funada et al. patent does not make up for the deficiency of the Samant et al. patent as the Samant et al. patent relates to claims 1 and 34. As such, Applicants also submit that claims 1 and 34, and **claims 3, 5, 6, 35, 37 and 38, by virtue of their dependence on claims 1 and 34, are all patentable** over the cited combination of the Samant et al. and Funada et al. patents. Nevertheless, below, Applicants explain that claims 3, 6, 35 and 38 are further distinguishable over the cited combination of the Samant et al. and Funada et al. patents.

Claims 3 and 35 each recite that the posts have a height in a range of about 1.0 to 1.2 μm. The Office Action recognizes that the Samant et al. patent does not disclose a height in a range of about 1.0

to 1.2 μm, and so the Office Action introduces the Funada et al. patent for its teaching of a groove having a depth in a range with a maximum value of 10,000 angstrom (i.e., 1 μm) (Funada et al. patent, col. 2, lines 61 - 68).

However, the Samant et al. patent states, at col. 5, lines 15 - 20:

> The wall(s) or pillar rising from the floor surface of the alignment layer will be of sufficient height to act as a spacer between planar components of the liquid crystal display device into which the subject alignment layers are incorporated. As such, the wall or pillar height will usually range from about 2 to 10 μm. (emphasis added)

Thus, the Samant et al. patent explains that the pillars must be of a sufficient height to act as a spacer, and discloses a minimum height (i.e., 2 μm) that is (a) more than 1.5 times greater than the maximum height of 1.2 μm recited in claims 3 and 35, and (b) two time greater that the maximum height of 1 μm disclosed in the Funada et al. patent.

Applicants respectfully submit that whereas the Samant et al. patent explains that the pillars must be of a sufficient height to act as a spacer, and discloses a typical minimum height that is (a) more than 1.5 times greater than the maximum height of 1.2 μm recited in claims 3 and 35, and (b) two time greater than the maximum height of 1 μm disclosed in the Funada et al. patent, pillars having a height in a range of about 1.0 to 1.2 μm would not appear to provide an adequate height for the spacer in the Samant et al. patent, and would arguably render the pillars unsuitable for their intended purpose. Accordingly, Applicants submit that **the Samant et al. patent cannot be asserted, either independently or in combination with the Funada et al. patent, in a section 103 rejection of claims 3 and 35**.

Claims 6 and 38 each recite that the posts are spaced from about 0.1 to 5 μm apart from each other. The Office Action recognizes that the Samant et al. patent does not disclose posts being spaced from about 0.1 to 5 μm apart from each other, and so the Office Action introduces the Funada et al. patent for its teaching of grooves having a width in a range with a maximum value of 10,000 angstrom (i.e., 1 μm) (Funada et al. patent, col. 3, lines 1 - 16).

However, the Samant et al. patent states, at col. 5, lines 9 - 13:

> In FIG. 3, for example, the distance between any two pillars in the alignment structure approximates the dimensions of a color subpixel as indicated in FIG. 3C. In such embodiments, the distance will typically range from about 50 μm to 500 μm. (emphasis added)

Thus, the Samant et al. patent explains that the distance between the pillars approximates the dimensions of a color subpixel, and discloses a minimum spacing (i.e., 50 μm) that is (a) 10 times greater than the maximum distance of 5 μm recited in claims 6 and 38, and (b) more than 50 times greater than the maximum width of 1 μm disclosed in the Funada et al. patent.

Applicants respectfully submit that whereas the Samant et al. patent explains that the distance between the pillars approximates the dimensions of a color subpixel, and discloses a minimum spacing that is (a) 10 times greater than the maximum distance of 5 μm recited in claims 6 and 38, and (b) more than 50 times greater than the maximum width of 1 μm disclosed in the Funada et al. patent, a spacing in a range of about 0.1 to 5 μm would not appear to be adequate to approximate the dimensions of a color subpixel as indicated by the Samant et al. patent, and would arguably render the pillars of the Samant et al. patent unsuitable for their intended purpose. Accordingly, Applicants submit that **the Samant et al. patent cannot be asserted, either independently or in combination with the Funada et al. patent, in a section 103 rejection of claims 6 and 38.**

Applicants respectfully request reconsideration and withdrawal of the section 103(a) rejection of claims 3, 5, 6, 35, 37 and 38.

In section 7 of the Office Action, claims 7 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Samant et al. patent in view of JP 5-249463 (hereinafter "JP '463"). Applicants are traversing this rejection.

Claim 7 depends from claim 1, and claim 40 depends from claim 34. Above, Applicants explained that each of claims 1 and 34 is novel over the Samant et al. patent. Applicants submit that JP '463 does not make up for the deficiency of the Samant et al. patent as the Samant et al. patent relates to claims 1 and 34. As such, Applicants also submit that claims 1 and 34, and **claims 7 and 40, by virtue of their dependence on claims 1 and 34, are all patentable** over the cited combination of the Samant et al. patent and JP '463.

Applicants respectfully request reconsideration and withdrawal of the section 103(a) rejection of claims 7 and 40.

In view of the foregoing, Applicants respectfully submit that all claims presented in this application patentably distinguish over the prior art. Accordingly, Applicants respectfully request favorable consideration and that this application be passed to allowance.

Respectfully submitted,

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Date

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